Our Mission ▶ Your Health

DIABETES INSTITUTE

Diabetes In-control NOW!

Winter 2006 Volume 1, Issue 4

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Your Diabetes Clinics

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Endocrinology
202-782-6750

Internal Medicine
202-782-6885

Virginia

DeWitt Army Community Hospital
703-805-9329

Family Health Center of Fairfax
703-970-4228

Rader Family Practice Center
703-696-7920

Family Health Center of Woodbridge
703-576-1364

Maryland

Kimbrough Ambulatory Care Center
301-677-8333

Letter from the Director of the Diabetes Institute

Dear Readers,

Welcome back to Diabetes In-control NOW! 2005 was a very productive year for the Diabetes Institute.

Last year, we published the first three issues of our newsletter and mailed more than 7,500 copies to homes of our patients throughout the United States. An additional 7,500 copies were made available to patients and providers throughout the Walter Reed Health Care System.

In conjunction with Novo–Nordisk, Animas, and The Diabetes Sport and Exercise Association (DESA), the DI offered its' first annual Fall into Fitness workshop. The workshop featured presentations related to research, exercise and nutrition and provided demonstrations of the three components (stretching, aerobic, and strength building) of a healthy exercise regimen:

Mr. Will Cross, the keynote speaker, is an expedition leader and world-class athlete who has trekked to both the North and South Poles and is the first person living with diabetes to reach the South Summit of Mount Everest. Two of his goals are to reach the highest peak on each continent and to show people with diabetes that they don't have to be defined by their disease.

In 2005, 98 patients attended the Diabetes Self Management Education classes (DSME) at WRAMC with 75% receiving certificates for completing both classes. Does education matter? The numbers on the Table say it all!

Table

Measure	Before DSME	After DSME	ADA* Goal
A1C	7.4%	7.0%	< 7.0%
Weight	196	184	Individualized
Total Cholesterol	182.7	166	< 150
LDL Cholesterol	109	96	< 100
HDL Cholesterol	46.5	48.9	Men > 45 Women > 55
Blood Pressure	128/71	120/67	130/80

*ADA American Diabetes Association

The past year built on previous years' successes. Since the DI first began in late 2000, our six diabetes nurse practitioners in seven clinics have seen more than 3,500 new patients with diabetes, 23,000 patients in follow-up visits, and made 44,000 patient phone calls. More than 1500 patients have participated in DI research studies since 2000.

Very few of us may visit the North or South Poles or climb Mount Everest. However we all have goals. All of us in the Diabetes Institute want to help you manage your diabetes successfully so you can continue to do the things that are meaningful to you. We are proud to have such wonderful partners and look forward to meeting even more of you in the future.

Sincerely,
Robert A. Vigersky, COL MC
Medical Director, Diabetes Institute

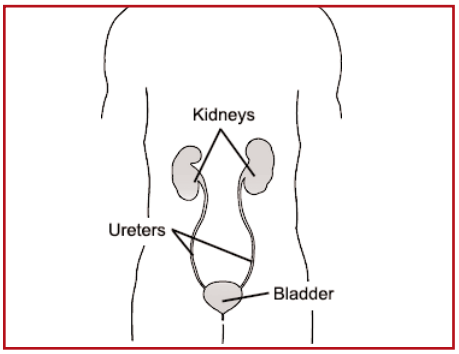
Diabetes & Kidney Disease

Nearly 22 million Americans have diabetes and over 100,000 people are living with kidney failure as a result of diabetes. Diabetes is the most common cause of kidney failure. Kidney failure or end stage renal disease (ESRD) is the final stage of a slow deterioration of the kidneys, a process known as nephropathy. When people have ESRD either dialysis or a kidney transplant is necessary to remove wastes formed and excreted by the kidneys .

A little about the kidneys...

The kidneys are the master chemists of the body. Normally there are two of them, one on either side of the spine under the lower ribs. They are reddish brown in color and shaped like kidney beans. Each kidney is about the size of your clenched fist. Their job is to remove waste products from the blood.

When our bodies digest the protein we eat, the process creates waste products. In the kidneys, millions of tiny blood vessels (capillaries) with even tinier holes in them act as filters. As blood flows through the blood vessels, small molecules such as waste products squeeze through the holes. These waste products become part of the urine. Useful substances, such as protein and red blood cells, are too big to pass through the holes in the filter and stay in the blood. In addition to removing wastes from the blood via the urine and returning the clean blood back to the body, the kidneys regulate the levels of water and different minerals needed by the body for good health. The kidneys also produce hormones that control other body functions. As you can see, many organs depend on the kidneys in order to work properly.



LOCATION OF KIDNEYS

How does diabetes affect the kidneys?

Damage to blood vessels

Diabetic kidney disease takes many years to develop. In the early stages of kidney disease, the kidney works harder than normal to remove wastes. This process has been called hyperfiltration. Over several years, people who are developing kidney disease will begin to leak small amounts of a blood protein called albumin into their urine. This condition is called microalbuminuria. During the early stages of microalbuminuria, the kidney's ability to remove or filter wastes usually remains normal. As the disease progresses, more albumin and other proteins leak into the urine. This is called proteinuria. As the amount of albumin in the urine increases, the ability of the kidney to filter wastes decreases and the wastes builds up in the body. Creatinine is one such waste, and a blood test for creatinine can measure the decline in kidney filtration. As kidney function deteriorates, blood pressure often rises as well.

Damage to nerves

Diabetes can also damage the nerves in many parts of the body. When the bladder is affected, it may be difficult to pass urine. The pressure from urine building up in the bladder can damage the kidneys.

Frequent infection

The urine of people with diabetes may have a high sugar content. This encourages the growth of bacteria which may cause frequent kidney infections. It is important to take special care to avoid infections and have them treated immediately.

What are the signs and symptoms of kidney disease?

The symptoms of kidney disease are not specific and do not occur until almost all function is gone. The first symptom is often edema or a build up of fluid in the feet and ankles. Other symptoms of kidney disease include loss of sleep, poor appetite, upset stomach, weakness, and difficulty concentrating.

Who is at risk for diabetic kidney disease?

Most people with diabetes do not develop nephropathy that is severe enough to cause kidney failure. Overall, kidney damage rarely occurs in the first 10 years of diabetes, and usually 15 to 25 years will pass before kidney failure occurs. For people who live with diabetes for more than 25 years without any signs of kidney

failure, the risk of ever developing it decreases. Unfortunately, even when diabetes is controlled, it can still lead to some degree of nephropathy.

African Americans, Native Americans, and Hispanic Americans develop diabetes, nephropathy, and kidney failure at rates higher than average. There is no explanation for these higher rates. Nor is the interplay of factors leading to diabetic nephropathy—factors including heredity, diet, and high blood pressure, well understood. We do know that high blood pressure and high levels of blood glucose increase the risk that a person with diabetes will develop kidney failure.

What can you do to prevent kidney disease?

Control your blood sugar

Intensive glucose management is a treatment regimen that aims to keep blood glucose levels close to normal. The regimen includes testing blood glucose frequently, taking your diabetes medications as directed, following a diet and exercise plan, and consulting your health care team frequently.

Research has shown that intensive glucose management reduces the risk of microalbuminuria, the early stage of kidney disease by one third and halts the progression of microalbuminuria to proteinuria by one half. Other studies have suggested that tight glucose control can reverse microalbuminuria. The American Diabetes Association (ADA) recommends pre-meal blood glucose levels between 90 and 130 and bedtime glucose levels between 110 and 150. Ask your PCP or diabetes specialist about your target blood glucose levels.

(continued on Page 5)

Every year, the Circle of Excellence Award, administered by The Henry M. Jackson Foundation for the Advancement of Military Medicine and sponsored by GlaxoSmith Kline, honors exceptional practices and programs developed and delivered by individuals and facilities within the US Federal Healthcare System. The programs are evaluated in three categories:

- Promote prevention
- Improve safety, and/or
- Enhance the overall quality of healthcare.

In November 2005 the Diabetes Institute (DI) of the Walter Reed Health Care System (WRHCS) was one of six winning practices or programs honored from the above categories. The clinical care provided by Dr. Vigersky and the diabetes nurse practitioners in seven clinics in the WRHCS, the American Diabetes Association recognized diabetes patient education programs throughout the WRHCS, and the research efforts into increasingly effective and efficient methods of diabetes recognition and management earned the DI the Quality Healthcare for Life award.

The DI is about you, our patients and family members. Our vision is to promote your health by finding new and improved ways to prevent the onset and complications of diabetes, detecting it earlier, and managing it more effectively. Join with us as we celebrate this award and look forward to another year of progress in the recognition and management of diabetes.

Pictured from left to right:
Front row: *Susan Walker, Ginger Schmidt, COL Vigersky, Lucia Novak, Deirdre Smith, Jeanne Clarkson.*
Second row: *Joanne Porwoll, Anna Lutz, Christine Kessler, Barbara Saladino, Doreen Huylebroeck.*
Third row: *Todd Woods, April Lake*

Does Diet Make a Difference?

Ann Hall, MRE, RD, LD, CDE, Renal Dietitian and Certified Diabetes Educator WRAMC

As you have just read, the kidneys are the master chemists of the body. Each kidney contains approximately one million tiny working units called nephrons. The nephrons process about 200 quarts of blood every day in order to remove about 2 quarts of waste and extra water. High blood glucose levels and high blood pressure can damage these complex, but very efficient filtering systems. When the nephrons are damaged, they cannot clear the blood of waste materials. The wastes and water build up in your blood and important proteins, such as albumin, are lost in your urine. In end stage renal disease (ESRD), the kidneys cannot remove any of the wastes and cannot form urine. When kidney disease has progressed to this stage, an individual requires dialysis or a kidney transplant in order to survive.

Two of the most important things you can do to stay "In Control NOW" and reduce your risk of developing kidney disease and all the other complications of diabetes are to control your blood glucose and your blood pressure. Monitoring your blood glucose, following your meal plan, limiting your sodium (salt) intake, exercising regularly, and taking your medications as directed are steps you can take every day to control your blood glucose and your blood pressure.

It is also essential to have a meal plan that incorporates both foods that you like and foods that reduce your risk of developing kidney disease and the other complications of diabetes. If you do not have a meal plan, meet with a dietitian to develop one that is just right for you. Once developed, however, a meal plan will not reduce your risk of complications or the worsening of complications if you do not follow it!!! Try the following suggestions and reduce your risk of developing kidney disease and other complications of diabetes:

Count your carbohydrates

Carbohydrate counting involves controlling the amount of carbohydrate you eat at meals and snacks to help to keep your blood sugar controlled.

Carbohydrate foods include bread, rice, cereals, pasta, vegetables, fruits and juices, milk, yogurt, sweets and desserts.

Choose carbohydrate foods that are less processed and high in fiber such as whole grain breads and cereals, fresh fruit and vegetables, brown rice, beans, peas, and lentils.

Until you meet with a dietitian you may follow these guidelines:

- Women eat 45-60 grams of carbohydrate per meal.
- Men eat 60-75 grams of carbohydrate per meal
- If you want a snack, limit your snack to 15-30 grams of carbohydrate.

Get rid of salt!!

- Eating too much sodium (salt) can raise your blood pressure and cause swelling in your body.
- Limit your intake of sodium to less than 2000 mg per day.
- Eat fresh, unprocessed foods.
- Do not add salt at the table or in cooking. 1 teaspoon of salt contains 2300 mg of sodium.
- If you use frozen meals, choose ones with 800mg of sodium or less per serving.
- Choose sauces, salad dressings, condiments, and snack foods that contain less than 150-200 mg of sodium per serving.
- Limit your use of canned foods unless they are labeled no-salt-added, low-sodium, sodium-free, or 33% less sodium.
- Read food labels to determine how much sodium is in the foods you are eating.

Eat moderate amounts of protein (meat/meat substitutes):

- Eating large amounts of animal protein may be harmful to your kidneys.
- Do not follow the high protein weight loss diets such as the Atkins or the South Beach diet.
- Eat small servings of meat and meat substitutes such as beef, pork, lamb, chicken, turkey, fish, seafood, wild game, eggs and cheese.

Guideline:

- Men should keep their meat/meat substitute intake to 5-6 ounces per day.

- Women to 3-4 ounces per day.
- This is approximately the amount of meat that would fit in the palm of your hand.

Schedule an appointment with a dietitian for assistance in designing a meal plan that is right for you:

- Walter Reed Army Medical Center, Wellness Services, 202.782.0907
- DeWitt Army Community Hospital, Nutrition Clinic, 703.805.0604
- Family Health Center of Woodbridge 703.550.2671
- Fairfax Family Health Clinic, 703.970.4237
- Rader Family Practice Center 703.696.3552

Diabetic nephropathy usually takes many years to develop. What you do today influences your tomorrows so decide now that you will get and stay In control NOW!

Diabetes & Kidney Disease *(continued from Page 3)*

Control your blood pressure

Blood pressure has a dramatic effect on the rate at which the disease progresses. Both a family history of hypertension and the presence of hypertension increase your risk of developing kidney disease. Even a mild rise in blood pressure can accelerates the progress of kidney disease where it already exists. Four ways to lower your blood pressure are losing weight, eating less salt, avoiding alcohol and tobacco, and getting regular exercise.

Hypertension is not only a cause of kidney disease, it can result from the damage caused by the disease. As kidney disease progresses, physical changes in the kidneys lead to increased blood pressure. Early detection and treatment of even mild hypertension are essential for people with diabetes.

There are two types of drugs used to lower blood pressure that can slow the progression of kidney disease. They are called Angiotensin-Converting Enzyme (ACE) inhibitors and Angiotensin Receptor Blockers (ARBs). ACE inhibitors have been shown to decrease proteinuria and slow deterioration of the kidney even in diabetic patients who did not have high blood pressure. ARBs have been shown to protect kidney function and lower the risk of cardiovascular events, such as heart attack and stroke. Any medicine that helps you achieve a blood pressure target of 130/80 or lower provides benefits. Patients with even mild hypertension or persistent microalbuminuria should consult a physician about the use of antihypertensive medicines.

Consider decreasing the amount of protein in your diet

In people with diabetes, excessive consumption of protein may cause your kidneys to work harder. Experts recommend that people with kidney disease consume the recommended dietary allowance (RDA) for protein, but avoid high-protein diets. For people with greatly reduced kidney function, a diet containing reduced amounts of protein may help delay the onset of kidney failure. Anyone following a reduced-protein diet should work with a dietitian to ensure adequate nutrition.

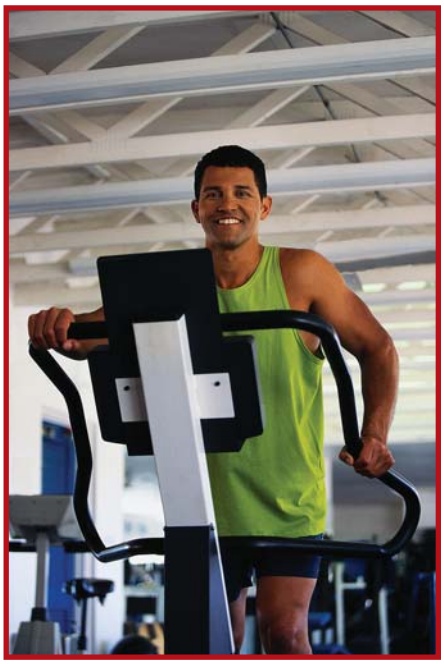
Good Care Makes a Difference

The incidence of kidney failure caused by diabetes has been rising. Some experts predict that diabetes soon might account for half the cases of kidney failure. Take the following steps to prevent or delay the development or progression of diabetic kidney disease. If you are currently on dialysis or have received a donor kidney, good blood glucose and blood pressure control can prevent or slow the progression of other complications of diabetes such as damage to the heart, eyes, and nerves.

- Check your urine and blood yearly for microalbumin (urine) and creatinine (blood).
- Check your blood pressure several times a year. Aim to keep it less than 130/80 unless otherwise indicated by your PCP or diabetes specialist.
- Ask your provider if you might benefit from taking an ACE inhibitor or an ARB
- Check your A1C at least twice a year. Aim to keep it less than 7%.
- Stop smoking
- Exercise regularly
- See a dietitian at least once a year to help you make healthy food choices.
- Ask your doctor if you should restrict the amount of protein you eat.
- Avoid excess alcohol
- See your doctor if you think you have a bladder infection
- Get enough sleep

Exercise: Stepping stones to better health

Travis Combest, BA, MS



Exercise is a great way to aid in the prevention and management of many diseases and their associated complications. It enhances one's sense of well-being, reduces tension, and even makes it easier to perform the activities of daily living. Questions you may be asking are what do I do to get started and how does exercise prevent disease or the complications of certain diseases such as diabetes? Keep reading to identify a few stepping stones to better health.

Get Started 1, 2, 3, 4, 5... go!!!

Identify your goal.

Do you want to lose weight, maintain your current weight, lower your blood glucose level, lower your blood pressure, develop more muscle, or improve your flexibility?

Check it out.

Consult with your provider, diabetes educator, and/or exercise physiologist to help you identify exercises that are safe and that will help you reach your goal(s).

3. Make it a priority!

Schedule time to exercise at least 3 days each week. It is just as important as eating and taking your medications. If you would like to lose weight, exercise at least 5 days each week.

Just beginning?

Start with 15-20 minutes each day and gradually increase to moderate intensity at least 3 to 5 five days each week for 30 minutes or longer. Walking or using a stationary bike at a low-intensity can help you ease into an effective exercise program.

Make exercise fun.

If you belong to a health club, sample the different kinds of equipment to see which ones you like. Listen to music or watch a favorite show when exercising. Find a friend to exercise with and hold each other accountable. Look into mall walking programs or other community activities that provide opportunities for both exercise and companionship.

Prevent your risk of heart attack, stroke, and kidney disease

Once you have taken the steps necessary to begin an exercise program, it is important to remain active. It requires effort and perseverance, but a regular exercise or activity program has been shown to lower blood pressure and blood sugar levels and contribute to weight loss and weight maintenance.

Blood Pressure

Endurance training can reduce systolic (number on top) and diastolic blood pressure (number on bottom) by as much as 10 points. Controlling blood pressure reduces the risk of stroke, heart attack, and kidney disease.

Blood Glucose

Exercise lowers blood glucose levels even after one exercise session. Exercise can also reduce your blood glucose for several hours after you have finished exercising. If you are beginning or changing an exercise program, it is important to check your blood sugar before exercising and 1 to 2 hours after exercising to see how it affects your blood sugar. When beginning to

exercise, aim for a mild to moderate level of intensity (you should able to carry on a conversation and/or breathe easily). If you participate in highly competitive, high intensity, or prolonged exercise it is even more important to discuss your activity with your provider or an exercise physiologist who specializes in diabetes.

Weight Management:

Exercising at least 5 days each week and controlling your caloric intake will enable you to lose unwanted pounds and keep them off. Even losing 10 pounds or 10% of your current weight has been shown to:

- improve the efficiency of your body's ability to produce and use insulin,
- lower blood pressure
- decrease the pressure on your joints
- increase your overall sense of accomplishment and feeling of well-being.

Make safety a priority!

- Carry a fast-acting snack with you while performing physical activity.
- Check your blood glucose before and after exercise to better understand how activity affects your blood sugar.
- Wear some form of diabetes and personal identification.
- Avoid vigorous physical exertion if the environment is extremely hot, humid, smoggy, or cold.
- Wear proper equipment and exercise shoes appropriate for the activity.
- Include warm-up and cool-down sessions to enhance flexibility and prevent injury.
- Find out from your provider if you are taking any medications that might mask low blood sugar levels and your body's ability to counteract them.
- Drink calorie and caffeine free liquids before, during, and after exercising:
  - at least 8 ounces before any activity
  - 8 to 12 ounces every 20-30 minutes during exercise
  - 8 ounces for every pound lost after exercising.
- Stop the activity if pain, lightheadedness, or shortness of breath occurs.

Reap the benefits!

I can't say it enough…regular exercise reduces your risk of developing diabetes and/or the complications of diabetes. Exercise can be an empowering experience that increases your overall sense of well-being and enables you to do more things you enjoy doing or have enjoyed doing in the past.

Make each day count! Incorporating physical activity as part of your lifestyle has handsome rewards.

Diabetes Classes

DeWitt Health Care Network
703.805.9329

Wednesday Evening
2nd & 4th Wednesdays every other month

Thursday Morning

Fairfax Family Health Center
703.970.4228

Wednesday
1st Wednesday of every month

Pre-diabetes Class
1st Thursday every other month

Woodbridge Family Health Center
703.576.1372

Monday Evening
1st and 3rd Monday of each month

Tuesday Morning
1st and 3rd Tuesday of each month

Pre-diabetes Class
4th Monday of each month

Walter Reed Army Medical Center
202.782.3308

Wednesday
2nd and 3rd Wednesdays of each month

Pre-diabetes Class
1st Wednesday of each month

Kimbrough Ambulatory Care Center
Ellen Lipscomb
301.677.8412

Diabetes Studies

Diabetic Autonomic Neuropathy
202.782.3310

Inhaled Insulin
202.782.5226

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Our Mission ▶ **Your Health**

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